(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 26 February 2004 (26.02.2004)

PCT

(10) International Publication Number WO 2004/017041 A3

(51) International Patent Classification⁷:

G01N 33/00

(21) International Application Number:

PCT/US2003/025812

(22) International Filing Date: 15 August 2003 (15.08.2003)

(25) Filing Language: .

English

(26) Publication Language:

English

(30) Priority Data:

60/404,279

15 August 2002 (15.08.2002) Us

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:

US

60/404,279 (CIP)

Filed on

15 August 2002 (15.08.2002)

- (71) Applicant (for all designated States except US): XY, INC. [US/US]; 1108 North Lemay Avenue, Fort Collins, CO 80524 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): EVANS, Kenneth, M. [US/US]; c/o Xy, Inc., 1108 North Lemay Avenue, Fort Collins, CO 80524 (US).
- (74) Agent: MILES, Craig, R.; Santangelo Law Offices, P.C., 125 South Howes, 3rd Floor, Fort Collins, CO 80521 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

- with international search report
- (88) Date of publication of the international search report: 15 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HIGH RESOLUTION FLOW CYTOMETER

(57) Abstract: high resolution particle differentiation process and separation system that provides enhanced resolution of particles based upon selected particle characteristics. In particular, the system may include an enhanced resolution flow cytometer. In an embodiment, the invention can include at least one fluid source conduit (24) that introduces 0 fluid source stream (24) into an enhanced resolution nozzle (25) at an angle that enhances particle resolution by the cell sensing system (13).





INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/25812

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : G01N 33/00			
US CL : 435/2; 422/73; 424/561; 436/10			
According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols) U.S.: 435/2; 422/73; 424/561; 436/10			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EAST			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *			Relevant to claim No.
Х	US 6,149,867 A (SEIDEL et al) 21 November 200	0 (21.11.2000), see entire document.	1-26
х	US 5,135,759 A (JOHNSON) 04 August 1992 (04.08.1992), see entire document.		1-26
	,		•
		•	
		•	
	·		
		·	
**			
	• • .		
•			
	<u> </u>	- <u></u> -	
Further	documents are listed in the continuation of Box C.	See patent family annex.	
Special categories of cited documents:		"T" later document published after the inter	
	defining the general state of the art which is not considered to be lar relevance	date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" carlier ap	plication or patent published on or after the international filing date	"X" document of particular relevance; the considered novel or cannot be considered	
	which may throw doubts on priority claim(s) or which is cited to the publication date of another citation or other special reason (as	when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is	
"O" document referring to an oral disclosure, use, exhibition or other means		combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family	
Date of the a	ctual completion of the international search	Date of mailing of the international search report	
08 March 2004 (08.03.2004)		21 APR 2004	
Name and mailing address of the ISA/US		Authorized officer	
Mail Stop PCT, Attn: ISA/US Commissioner for Patents		L Blaine Lankford A. Roberts for	
P.O. Box 1450		Telephone No. 571-272-1600	
	candria, Virginia 22313-1450 . (703) 305-3230	тегерионе 110. 3/1-2/2-1000	-

Form PCT/ISA/210 (second sheet) (July 1998)